

FSIS Docket Clerk, Docket #00-048N
U.S. Department of Agriculture
Food Safety and Inspection Service
Room 102, Cotton Annex,
300 12th Street, S.W.
Washington, D.C. 20250-3700.

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Anthony J. Fontana, Jr. Ph.D.

To Whom It May Concern:

This letter is in reference to the public comments requested on the *L.monocytogenes* Relative Risk Draft Assessment and Action Plan. It is our understanding that the Action Plan is aimed at reducing the incidence of listerial gastroenteritis and listeriosis resulting from the contamination of the United States food supply with *L. monocytogenes*. We also note that the stated goal of the new USDA regulations is to reduce the incidence of illness or death due to listeriosis by 50% during by 2005. As manufacturers of water activity instrumentation, Decagon Devices, Inc. is aware of the ways in which water activity instruments can be used by food processors to reduce the risk of food-borne illness. We suggest that water activity be used as part of a program to reduce the risk of sickness or death due to *L. monocytogenes* contamination.

As presently constituted, the eight-area action plan for the reduction of the presence of *L. monocytogenes* in food products focuses almost exclusively on detection of the bacteria and the creation of new handling procedures for ready-to-eat food products. While more stringent detection testing and new handling procedures will certainly help reduce the risk of a *L. monocytogenes* outbreak, even the 50% goal assumes that some contaminated food products will reach consumers in spite of these new efforts. A more complete food safety plan should include a method for evaluating whether *L. rnonocytogenes-contaminated* products can support proliferation, since the level of bacteria present invariably affects the severity of the illness in persons who consume contaminated products. Water activity testing can be used for this risk assessment.

In the section entitled "Post-Retail Growth of Listeria", the Draft Risk Assessment Document states "even when *L. rnonocytogenes* is initially present at a low level in a contaminated food, the microorganism can multiply during storage, including storage at refrigeration temperatures". Concurrently, it has been shown that *L. monocytogenes* growth is very difficult to control though refrigeration alone. However, it also is proven that below a water activity of 0.92 no growth of *L. rnonocytogenes* occurs (Farber *et al.*, 1992). Water activity in combination with other hurdles, such as pH, temperature, or modified atmosphere packaging, will limit growth even at higher than 0.92 water activity levels.

It is impractical to bring the water activities of some products such as frankfurters and soft cheese below this level. However, using the 0.92 a_w standard, it is possible to assess the risk of post-packaging *L. monocytogenes* growth in most food products. This relates directly to many of

the products appearing on the Draft **Risk** Assessment Document's Table 1, including: Smoked Seafood, Preserved Fish, Natural Cheese, Aged Cheese, Dry/Semi-Dry Fermented Sausages, Pâté, and Meat Spreads. Because the water activities of these products are relatively close to 0.92, simple changes in processing or formulation that slightly lower the water activity can stop *L. monocytogenes* growth. Furthermore, continual monitoring of water activity can confirm that all product runs that leave a processing facility will be safe from *L. monocytogenes* growth.

We recognize that water activity testing is not a complete solution to the problem of *L. monocytogenes* contamination. However, it can be an integral part of a strategy for reducing the incidence of illness due to this bacterium. We urge the USDA, FDA, CDC, and FSIS to use water activity testing to improve the efficacy of the *L. monocytogenes* action plan. We have attached a reference list of research papers related to water activity and *L. monocytogenes* growth. Should you require further reference material, or any other information on this subject, please contact us.

Best Regards,

A handwritten signature in black ink, appearing to read 'Anthony J. Fontana Jr.', written in a cursive style.

Anthony J. Fontana Jr. Ph.D.
Applications Engineer

Water Activity and *Listeria monocytogenes* References

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